

The Examiners objections are based mainly on Park (CH 665012) and Zeller (CH 627832).

Both Park and Zeller relate to fabricated steel enclosed fireboxes forming part of fires which warm using convection.

There are two basic types of open fire:

- a) The radiation fire. This fire has a refractory fireback and the room is heated almost entirely by radiation, part of which is directly from the firebed, and part of which is by re-radiation from the heated refractory surface. There is also a small contribution from radiation reflected from the fireback and another small contribution from the convection from the warmed surround of the fire place.
- b) The convection fire. This is basically a metal fire box with an open front, which is surrounded by an air space which connects with the air in the room. The room is heated substantially by the heating of the air in the air space surrounding the firebox and the circulation of the heated air by convection. There is also a part contribution due to radiation from the firebed. The fireback contributes little to the radiation from the fire being continuously cooled by the air.

Of the cited documents Park, Andrews and Zeller relate to convection fires and are not relevant to the present invention since they relate to a totally different type of fire.

As now defined, the present invention relates to a refractory fireback and defines the inner surface of the fireback, between the firebed and throat, as being frustoconical or pyramidal.

The two cited documents that relate to refractory fires, Hendricks & Buffington, do not disclose the use of such surfaces. Buffington discloses a fire box basically having a half cylindrical shape with a semi-circular section. Only the upper portion adjacent the

throat is frustoconical. There is no disclosure of the walls sloping steadily inwards from the firebed to the throat. Hendicks discloses a fireback having vertical sidewalls and a rear wall having its upper portion sloping inwardly substantially as shown in Fig.1 of the present application.

Neither of these two cited documents, which relate to refractory fire backs, discloses the invention as now claimed.

Park, Andrews and Zeller relate to non refractory convection fires. It is submitted that any disclosures relating to the workings of convection fires is not relevant to the workings of refractory fires. It is further submitted that the matter disclosed in Andrews, Zeller and Park cannot be fairly combined with the teachings of Buffington and Hendricks.

It is believed that the claims as presently amended patentably distinguish over the cited references and this application should now be in condition for allowance and such action is respectfully requested.

If the Examiner still feels that there are some minor matters which still need to be resolve, Applicant's attorney would welcome a phone call from the Examiner at the below listed phone number.

Respectfully submitted,

  
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Paul E Milliken

Signature

